

AMENDMENTS

In the Claims:

1. (Currently Amended) An image processing method for printing images on an image printing device based on a file stored in an image data transmission device using a portable terminal, said image data transmission device connected to a first internal network ~~constructed inside~~ provided behind a first firewall, said image printing device connected to a second internal network ~~constructed inside~~ provided behind a second firewall, and a file server connected to an external network ~~constructed on the~~ provided outside of said first firewall and said second firewall, comprising:

said portable terminal establishing a connection with said image data transmission device via said second internal network, said second firewall, said external network, said first firewall and said first internal network, wherein establishing the connection comprises using a protocol which allows a first bi-directional connections connection between the first internal network and the external network and a second bi-directional connection between the second internal networks network and the external network ~~at said first firewall and said second firewall~~;

said portable terminal transmitting an image printing request ~~for said stored file~~ to said image data transmission device, wherein said image printing request identifies said stored file;

said image data transmission device receiving said image printing request and preparing a print job to print images associated with said stored file ~~according~~ in response to said image printing request;

said image data transmission device establishing a connection with said file server via said first internal network, said first firewall, and said external network using a protocol[[,]] which allows only uni-directional connections ~~only~~ from the first internal network to the external network at said first firewall;

said image data transmission device uploading said prepared print job to said file server;

said image printing device establishing a connection with said file server via said second internal network, said second firewall, and said external network using a protocol[[,]] which allows ~~connections~~ only uni-directional connections from the second internal network to the external network at said second firewall;

said image printing device downloading said prepared print job from said file server; and
said image printing device printing images based on said downloaded ~~printing~~ print job data.

2. (Previously Presented) An image processing method according to claim 1 further comprising:

said image data transmission device transmitting a storage location data indicating where said uploaded print job is stored on said file server to said portable terminal;

said portable terminal receiving said storage location data which said image data transmission device transmitted;

said portable terminal displaying said received storage location data; and

said image printing device receiving an entry of said storage location data;

wherein said image printing device downloads said print job from the storage location on said file server based on said storage location data.

3. (Previously Presented) An image processing method according to claim 1 further comprising:

said image data transmission device transmitting a storage location data indicating where said uploaded print job is stored on said file server to said portable terminal;

said portable terminal receiving said storage location data which said image data transmission device transmitted;

said portable terminal transferring said received storage location data to said image printing device via said second internal network or a local communication circuit; and

said image printing device receiving said storage location data transferred by said portable terminal;

wherein said image printing device downloads said print job from the storage location on said file server based on said storage location data.

4. (Previously Presented) An image processing method according to claim 1 further comprising:

said file server transmitting a storage location data indicating where said print job uploaded by said image data transmission device is stored on said file server to said portable terminal;

said portable terminal receiving said storage location data which said file server transmitted;

said portable terminal displaying said received storage location data; and

said image printing device receiving an entry of said storage location data;

wherein said image printing device downloads said print job from the storage location on said file server based on said storage location data.

5. (Previously Presented) An image processing method according to claim 1 further comprising between:

said file server transmitting a storage location data indicating where said print job uploaded by said image data transmission device is stored on said file server to said portable terminal;

said portable terminal receiving said storage location data which said file server transmitted;

said portable terminal transferring said received storage location data to said image printing device via said second internal network or a local communication circuit;

said image printing device receiving said storage location data transferred by said portable terminal;

wherein said image printing device downloads said print job from the storage location on said file server based on said storage location data.

6. (Previously Presented) An image processing method according to claim 1 wherein said image printing device is a printer.

7. (Previously Presented) An image processing method for forming an image on an image printing device based on a file stored in an image data transmission device using a portable terminal, said image data transmission device connected to a first internal network constructed inside a first firewall, said image printing device connected to a second internal network constructed inside a second firewall, and a file server connected to an external network constructed on the outside of said first firewall and said second firewall, comprising:

said portable terminal establishing a connection with said image data transmission device via a public network, a public network authenticating server connected to said first internal network, and said first internal network;

said portable terminal transmitting an image printing request for said file stored in said image data transmission device to said image data transmission device;

said image data transmission device receiving said image printing request transmitted by said portable terminal and preparing a print job for said file according to said image printing request;

said image data transmission device establishing a connection with said file server via said first internal network, said first firewall, and said external network using a protocol, which allows connections only from the first internal network to the external network at said first firewall;

said image data transmission device uploads said prepared print job to said file server;
said image printing device establishing a connection with said file server via said second internal network, said second firewall, and said external network using a protocol, which allows connections only from the second network to the external network at said second firewall;
said image printing device downloading said print job from said file server; and
said image printing device forming said image based on said downloaded print job.

8. (Previously Presented) An image processing method according to claim 7 further comprising:

said image data transmission device transmitting a storage location data indicating where said uploaded print job is stored on said file server to said portable terminal;
said portable terminal receiving said storage location data which said image data transmission device transmitted;
said portable terminal displaying said received storage location data; and
said image printing device receiving an entry of said storage location data;
wherein said image printing device downloads said print job from the storage location on said file server based on said storage location data.

9. (Previously Presented) An image processing method according to claim 7 further comprising:

said image data transmission device transmitting a storage location data indicating where said uploaded print job is stored on said file server to said portable terminal;
said portable terminal receiving said storage location data which said image data transmission device transmitted;

said portable terminal transferring said received storage location data to said image printing device via said second internal network or a local communication circuit; and

said image printing device receiving said storage location data transferred by said portable terminal;

wherein said image printing device downloads said print job from the storage location on said file server based on said storage location data.

10. (Previously Presented) An image processing method according to claim 7 further comprising:

said file server transmitting a storage location data indicating where said print job uploaded by said image data transmission device is stored on said file server to said portable terminal;

said portable terminal receiving said storage location data which said file server transmitted;

said portable terminal displaying said storage location data; and

said image printing device receiving an entry of said storage location data;

wherein said image printing device downloads said print job from the storage location on said file server based on said storage location data.

11. (Previously Presented) An image processing method according to claim 7 further comprising:

said file server transmitting a storage location data indicating where said print job uploaded by said image data transmission device is stored on said file server to said portable terminal;

said portable terminal receiving said storage location data which said file server transmitted;

said portable terminal transferring said received storage location data to said image printing device via said second internal network or a local communication circuit;

said image printing device receiving said storage location data transferred by said portable terminal;

wherein said image printing device downloads said print job from the storage location on said file server based on said storage location data.

12. (Previously Presented) An image processing method according to claim 7 wherein said image printing device is a printer.

13. (Previously Presented) An image processing system for forming an image on an image printing device based on a file stored in an image data transmission device, using a portable terminal, said image data transmission device connected to a first internal network constructed inside a first firewall, said image printing device connected to a second internal network constructed inside a second firewall, and a file server connected to an external network constructed on the outside of said first firewall and said second firewall, wherein:

said portable terminal comprises,

a first connection establisher to establish a connection with said image data transmission device via said second internal network, said second firewall, said external network, said first firewall and said first internal network using a protocol, which allows bi-directional connections between the first internal network and the external network at said first firewall and said second firewall, and

an image printing request transmitter to transmit an image printing request for said file stored in said image data transmission device to said image data transmission device;

said image data transmission device comprises,

an image printing request receiver to receive said image printing request from said portable terminal,

an print job preparer to prepare an print job for said file based on said image printing request received by said image printing request receiver,

a second connection establisher to establish a connection with said file server via said first internal network, said first firewall, and said external network using a protocol, which allows connections only from the first internal network to the external network at said first firewall, and

a print job uploader to upload said print job prepared by said print job preparer to said file server; and

said image printing device comprises,

a third connection establisher to establish a connection with said file server via said second internal network, said second firewall, and said external network using a protocol, which allows connections only from the second internal network to the external network at said second firewall,

a print job downloader to download said print job from said file server, and

an image former to form said image based on said print job downloaded by said print job downloader.

14. (Previously Presented) An image processing system according to claim 13 wherein said image printing device is a printer.

15. (Previously Presented) An image processing system for forming an image on an image printing device based on a file stored in an image data transmission device, using a portable terminal, said image data transmission device connected to a first internal network constructed inside a first firewall, said image printing device connected to a second internal network constructed inside a second firewall, and a file server connected to an external network constructed on the outside of said first firewall and said second firewall, wherein

said portable terminal comprises,

a first connection establisher to establish a connection with said image data transmission device via a public network, a public network authenticating server connected to said first internal network, and said first internal network, and

an image printing request transmitter to transmit an image printing request for said file stored in said image data transmission device to said image data transmission device;

said image data transmission device comprises,

an image printing request receiver to receive said image printing request from said portable terminal,

a print job preparer to prepare a print job for said file based on said image printing request received by said image printing request receiving means,

a second connection establisher to establish a connection with said file server via said first internal network, said first firewall, and said external network using a protocol, which allows connections only from the first network to the external network at said first firewall, and

a print job uploader to upload said print job prepared by said print job preparing means to said file server; and

said image printing device comprises,

a third connection establisher to establish a connection with said file server via said second internal network, said second firewall, and said external network using a protocol, which allows connections only from the second internal network to the external network at said second firewall,

a print job downloader to download said print job from said file server, and

an image former to form said image based on said print job downloaded by said print job downloader.

16. (Previously Presented) An image processing system according to claim 15 wherein said image printing device is a printer.

17. (Previously Presented) A portable terminal for forming an image on an image printing device based on a file stored in an image data transmission device, using said portable terminal, said image data transmission device connected to a first internal network constructed inside a first firewall, said image printing device connected to a second internal network constructed inside a second firewall, and a file server connected to an external network constructed on the outside of said first firewall and said second firewall, comprising:

a connection establisher to establish a connection with said image data transmission device via said second internal network, said second firewall, said external network, said first firewall and said first internal network using a protocol, which allows bi-directional connections between the first network and the external network at said first firewall and said second firewall; and

an image printing request transmitter to transmit an image printing request for said file stored in said image data transmission device to said image data transmission device.

18. (Previously Presented) A portable terminal according to claim 17 further comprising:

a storage location data receiver to receive a storage location data indicating where a print job for said file uploaded to said file server by said image data transmission device is located on said file server; and

a storage location data display to display said storage location data received by said storage location data receiver.

19. (Previously Presented) A portable terminal according to claim 17 further comprising:

a storage location data receiver to receive a storage location data indicating where a print job for said file uploaded to said file server by said image data transmission device is located on said file server; and

a storage location data transferrer to transfer said storage location data received by said storage location data receiver via said second internal network or local communication circuit to said image printing device.

20. (Previously Presented) A portable terminal according to claim 17 wherein said image printing device is a printer.

21. (Previously Presented) A portable terminal for forming an image on an image printing device based on a file stored in an image data transmission device, using said portable terminal, said image data transmission device connected to a first internal network constructed inside a first firewall, said image printing device connected to a second internal network constructed inside a second firewall, and a file server connected to an external network constructed on the outside of said first firewall and said second firewall, comprising:

a connection establisher to establish a connection with said image data transmission device via a public network, a public network authenticating server connected to said first internal network, and said first internal network; and

an image printing request transmitter to transmit an image printing request for said file stored in said image data transmission device to said image data transmission device.

22. (Previously Presented) A portable terminal according to claim 21 further comprising:

a storage location data receiver to receive a storage location data indicating where a print job for said file uploaded to said file server by said image data transmission device is located on said file server; and

a storage location data display to display said storage location data received by said storage location data receiving means.

23. (Previously Presented) A portable terminal according to claim 17 further comprising:
a storage location data receiver to receive a storage location data indicating where a print job for said file uploaded to said file server by said image data transmission device is located on said file server; and
a storage location data transferrer to transfer said storage location data received by said storage location data receiving means via said second internal network or local communication circuit to said image printing device.

24. (Previously Presented) A portable terminal according to claim 17 wherein said image printing device is a printer.

25. (Previously Presented) An image data transmission device for forming an image on an image printing device based on a file stored in said image data transmission device, using a portable terminal, said image data transmission device connected to a first internal network constructed inside a first firewall, said image printing device connected to a second internal network constructed inside a second firewall, and a file server connected to an external network constructed on the outside of said first firewall and said second firewall, comprising:

a file storage to store said file;
an image printing request receiver to receive an image printing request for said file stored in said file storage means from said portable terminal;
a print job preparer to prepare a print job for said file based on said image printing request received by said image printing request receiver;
a connection establisher to establish a connection with said file server via said first internal network, said first firewall, and said external network using a protocol, which is allowed to make connections only from the first internal network to the external network at said first firewall; and

a print job uploader to upload said print job prepared by said print job preparing means to said file server.

26. (Previously Presented) An image data transmission device according to claim 25 further comprising a storage location data transmitter to transmit a storage location data indicating where said print job uploaded to said file server by said print job uploader is located on said file server to said portable terminal.

27. (Previously Presented) A print job transmitting device according to claim 25 wherein said image printing device is a printer.

28. (Previously Presented) An image printing device for forming an image based on a file stored in an image data transmission device, using a portable terminal, said image data transmission device connected to a first internal network constructed inside a first firewall, said image printing device connected to a second internal network constructed inside a second firewall, and a file server connected to an external network constructed on the outside of said first firewall and said second firewall, comprising:

a connection establisher to establish a connection with said file server via said second internal network, said second firewall, and said external network using a protocol, which allows connections only from the second internal network to the external network at said second firewall;

a print job downloader to download from said file server a print job for said file uploaded by said image data transmission device to said file server; and

an image printing device to form said image based on said print job downloaded by said print job downloader.

29. (Previously Presented) An image printing device according to claim 28 further comprising a storage location data receiver to receive a storage location data indicating where said print job is located on said file server,

wherein said print job downloader downloads said print job from the storage location on said file server based on said storage location data received by said storage location data receiver.

30. (Previously Presented) An image printing device according to claim 28 further comprising a storage location data receiver to receive a storage location data indicating where said print job is located on said file server from said portable terminal via said second internal network or local communication circuit;

wherein said print job downloader downloads said print job from the storage location on said file server based on said storage location data received by said storage location data receiver.

31. (Previously Presented) An image printing device according to claim 28 wherein said image printing device is a printer.

32. (Previously Presented) A recording medium that stores a program to control a portable terminal for forming an image on an image printing device based on a file stored in an image data transmission device, using said portable terminal, said image data transmission device connected to a first internal network constructed inside a first firewall, said image printing device connected to a second internal network constructed inside a second firewall, and a file server connected to an external network constructed on the outside of said first firewall and said second firewall, characterized in causing said portable terminal to execute:

establishing a connection with said image data transmission device via said second internal network, said second firewall, said external network, said first firewall and said first internal

network using a protocol, which allows bi-directional connections between the first internal network and the external network at said first firewall and said second firewall, and

transmitting an image printing request for said file stored in said image data transmission device to said image data transmission device.

33. (Canceled).

34. (Previously Presented) A recording medium that stores a program to control a portable terminal for forming an image on an image printing device based on a file stored in an image data transmission device, using said portable terminal, said image data transmission device connected to a first internal network constructed inside a first firewall, said image printing device connected to a second internal network constructed inside a second firewall, and a file server connected to an external network constructed on the outside of said first firewall and said second firewall, characterized in causing said portable terminal to execute:

establishing a connection with said image data transmission device via a public network, a public network authenticating server connected to said first internal network, and said first internal network, and

transmitting an image printing request for said file stored in said image data transmission device to said image data transmission device.

35. (Canceled).

36. (Previously Presented) A recording medium that stores a program to control an image data transmission device for forming an image on an image printing device based on a file stored in said image data transmission device, using a portable terminal, said image data transmission device

connected to a first internal network constructed inside a first firewall, said image printing device connected to a second internal network constructed inside a second firewall, and a file server connected to an external network constructed on the outside of said first firewall and said second firewall, characterized in causing said image data transmission device to execute:

- receiving an image printing request for said file from said portable terminal;
- preparing a print job for said file based on said image printing request;
- establishing a connection with said file server via said first internal network, said first firewall, and said external network using a protocol, which allows connections only from the first internal network to the external network at said first firewall; and
- uploading said print job to said file server.

37. (Canceled).

38. (Previously Presented) A recording medium that stores a program to control an image printing device for forming an image based on a file stored in an image data transmission device, using a portable terminal, said image data transmission device connected to a first internal network constructed inside a first firewall, said image printing device connected to a second internal network constructed inside a second firewall, and a file server connected to an external network constructed on the outside of said first firewall and said second firewall, characterized in causing said image printing device to execute:

- establishing a connection with said file server via said second internal network, said second firewall and said external network using a protocol, which allows connections only from the second internal network to the external network at said second firewall;

downloading from said file server a print job for said file uploaded by said image data transmission device to said file server; and
printing based on said print job.

39. (Canceled).

40. (New) A remote printing method, comprising:

providing a first network comprising an image storage device and a first firewall, the image storage device being provided behind the first firewall;

providing a second network comprising a printing device and a second firewall, the printing device being provided behind the second firewall;

providing an external network comprising a file server;

storing an image file in the image storage device;

forming a bi-directional connection between a portable terminal and the image storage device, the bi-directional connection being formed through the second network, the second firewall, the external network, the first firewall and the first network;

transmitting a file reference request from the portable terminal to the image storage device via the bi-directional connection;

transmitting file image information from the image storage device to the portable device via the bi-directional connection in response to the file reference request;

transmitting an image printing request from the portable terminal to the image forming device via the bi-directional connection, the image printing request comprising printing instructions;

forming a print job at the image storage device in response to the image printing request;

forming a first uni-directional connection between the image storage device and the file server through the first firewall;

transmitting the print job from the image storage device to the file server via the first uni-directional connection;

storing the print job in the file server;

forming a second uni-directional connection between the file server and the printing device through the second firewall;

transmitting the print job from the file server to the printing device via the second uni-directional connection;

printing images using the printing device, the images being based on the print job.

41. (New) A remote printing system, comprising:

a first network comprising an image storage device and a first firewall, the image storage device being provided behind the first firewall and configured to store an image file;

a second network comprising a printing device and a second firewall, the printing device being provided behind the second firewall;

an external network comprising a file server; and

a portable terminal;

wherein the system is configured to form a bi-directional connection between the portable terminal and the image storage device through the second network, the second firewall, the external network, the first firewall and the first network, such that

a file reference request may be transmitted from the portable terminal to the image storage device via the bi-directional connection;

file image information may be transmitted from the image storage device to the portable device via the bi-directional connection in response to the file reference request; and

an image printing request may be transmitted from the portable terminal to the image forming device via the bi-directional connection, the image printing request comprising printing instructions;

wherein the image storage device is configured to form a print job at in response to the image printing request;

wherein the system is further configured to form a first uni-directional connection between the image storage device and the file server through the first firewall and to transmit the print job from the image storage device to the file server via the first uni-directional connection;

wherein the file server is configured to store the print job;

wherein the system is further configured to form a second uni-directional connection between the file server and the printing device through the second firewall and to transmit the print job from the file server to the printing device via the second uni-directional connection; and

wherein the printing device is configured to print images based on the print job.